



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/447,256	11/23/1999	NOBUYOSHI NAKAJIMA	2091-0205P	3582

7590 12/23/2003

BIRCH STEWART KOLASCH & BIRCH LLP
P O BOX 747
FALLS CHURCH, VA 220400747

EXAMINER

LAROSE, COLIN M

ART UNIT	PAPER NUMBER
----------	--------------

2623

DATE MAILED: 12/23/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/447,256

Applicant(s)

NAKAJIMA, NOBUYOSHI

Examiner

Colin M. LaRose

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 August 2003 has been entered.

Response to Arguments

2. Applicant's arguments filed 19 August 2003 have been fully considered but they are not persuasive. In a personal interview with Mr. Martin Geissler (51,011) on 11 December 2003, the Examiner maintained that the combination of Kobori and Kado, as applied to claims 1, 3, and 5, is valid.

Kobori essentially teaches all of the features of claims 1, 3, and 5 except performing the claimed pattern matching process to calculate the amount of displacement and/or size difference and then normalizing the face based on the calculated amount of displacement and/or size difference. In order to normalize the face, Kobori relies on trial-and-error positioning of the video camera in relation to the head rather than directly calculating the deviation or displacement of the face from a standard positioning.

Kado is relied upon to cure this deficiency in Kobori. Kado is confronted with the same problem as Kobori: the face of a person is required to be in a normalized position when captured by a video camera. Whereas Kobori discloses adjusting the video camera parameters to

Art Unit: 2623

normalize the face within the image frame, Kado teaches performing a pattern-matching routine in order to correct the captured image of the face.

Reference was made to column 3, lines 35-51 of Kado, wherein Kado discloses normalizing the face (i.e. correcting the face for tilt, size, etc.) by detecting features of the face and comparing the detected features to a standard template. Based on the relative rotational and dimensional offsets between the captured features and the standard template, the face is normalized for further processing.

Thus, Kado and Kobori both successfully normalize a face in relation to a video camera, however, Kado's method is advantageous because it does not rely on trial and error.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over and U.S. Patent 5,109,281 by Kobori et al. ("Kobori") and U.S. Patent 5,410,609 by Kado et al. ("Kado").

Regarding claim 1, Kobori discloses an image processing method (figure 3) for obtaining a layout image signal representing a layout image, in which a plurality of person images are laid out, from a plurality of original image signals, each of the original image signals representing a person image, in which a face pattern of a person is embedded, the method comprising the steps of:

Art Unit: 2623

i) detecting face information from each of the original image signals, said face information representing a position of the face pattern of the person in the person image represented by each original image signal;

[In figure 3, a camera is set to image the left of two face images ("c-1", figure 2). The left face image signal is stored in memory, and the position of the face is detected (column 4, lines 50-51). This process is also repeated for the right face image.]

iii) performing a face pattern normalizing process on each of the original image signals based on said detected face information, a plurality of normalized image signals being obtained from said face pattern normalizing process;

[After the position of the left face image signal is detected, it is determined whether the positioning of the object is satisfactory, and based on the determination that the positioning is unsatisfactory, the imaging conditions are adjusted, and the adjusted image signal is stored (column 4, lines 53-57). This process repeats until the face is centered in the image. In other words, in accordance with the detected positioning information, the face image signal is continually adjusted until it becomes normalized (i.e. centered) in the image. This normalizing process is also repeated for the right face image signal.]

iv) laying out a plurality of images, which are represented by said normalized image signals, in a predetermined layout.

[After the normalization of both of the face image signals, the face images have been laid out in a format suitable for printing, and a print command is issued (column 4, lines 64-67). Koberi does not expressly disclose obtaining a layout image signal representing the thus

Art Unit: 2623

formed layout image. However, the layout signal is implicitly obtained, since the layout image is printed by a single print command.]

Kobori is silent to performing a pattern matching process, as claimed, to calculate an amount of displacement or size difference from a normalized value, and then using the displacement or difference for normalizing the face. Instead, Kobori relies on trial and error for normalizing the face. The position of the face is checked and repeatedly adjusted until it is satisfactory (figure 3).

Kado discloses a method for processing faces, and more specifically, the method relates to identifying a face in an image. Like Kobori, Kado normalizes the image of the face by correcting its position. Rather than relying on trial and error, Kado employs pattern matching to directly calculate the correction amount to be used for normalization. In particular, Kado discloses comparing a pattern of a standard (normalized) face to the inputted face pattern in order to detect spatial differences between the two, such as the tilt of inputted face with respect to the standard face. Based on the detection of these differences, normalization procedures such as enlargement, rotation, and reduction are carried out on the inputted face so that the image of the face becomes normalized. Column 3, lines 35-51.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kobori by Kado to perform a pattern matching process to calculate a displacement or size difference between the inputted face and a normalized value (i.e. normalized face) and then normalize the inputted face based on the displacement or difference since Kado's pattern

Art Unit: 2623

matching process for normalizing the face determines the necessary correction amount without relying on trial and error. Thus, Kobori's repeated adjustments and position checks do not have to be made.

Regarding claims 3 and 5, Kobori discloses using a computer-readable recording medium to perform the above steps (computer 7, memory 10, and monitor 15 of figure 1), and Kado discloses pattern matching means and normalization means (column 3, line 38: extracting unit 2, figure 1).

5. Claims 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobori and Kado in view of Stated Prior Art of U.S. Patent U.S. Patent 4,618,991 by Tabata et al. ("Tabata").

Regarding claims 2, 4, and 6, Kado teaches that the normalization is carried out by e.g. rotating the face to correct tilt (column 3, lines 43-51). However, Kado is silent to performing the face pattern normalization by utilizing affine transformation.

Tabata discloses a method for rotating an image. In particular, Tabata teaches that it is conventional to rotate an image using an affine transformation (column 1, lines 16-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kado by Tabata to utilize an affine transformation for the normalizing process, since Kado teaches that normalization is carried out by image rotation, and Tabata discloses that the use of an affine transformation to rotate an image is well-known.

Conclusion

6. This is a continuation of applicant's earlier Application No. 09/447,256. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. The examiner can normally be reached Monday through Thursday from 8:00 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Art Unit: 2623

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML

Group Art Unit 2623

11 December 2003


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600